Paper No. 24

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte PARAMVIR BAHL and WE-LIEN HSU

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Appeal No. 2003-0699
Application No. 09/169,724

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HEARD: Oct. 23, 2003

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Before KRASS, JERRY SMITH, and BARRY, *Administrative Patent Judges*.

BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1-12, 14-25, 27-41, and 43-57. The

appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The invention at issue on appeal concerns transmitting video data over error-

prone channels. (Appeal Br. at 2.) In a wireless communication channel, variations

and unpredictability in error characteristics are problematic. Current standards for video

coding including H.261, MPEG-1, MPEG-2 and H.263, which were developed

without regard to the error characteristics of a communication channel, explain the

appellants, fail to provide the error resiliency needed to alleviate the problem. (Spec. at

1.) They add that current schemes for error protection and error recovery waste

bandwidth within the communication channel. (*Id.* at 2.)

Accordingly, the appellant's video encoder segments a video frame into discrete

spatial components. Each discrete spatial component is then transformed into discrete

frequency components. Components are evaluated to learn the peak number of bits

required for their transmission, and bandwidth is requested as a function of this

determination. The most important components are transmitted first in the requested

bandwidth. Any remaining bandwidth is used to transmit any remaining components.

(Id. at 2-3.)

The appellants' video decoder checks the components it receives for

transmission errors. If any such errors are present, components from a previous

transmission are substituted therefor. According to the appellants, "the[ir] invention

overcomes the noted deficiencies in the prior art by . . . reducing the reliance on error

correction and error recovery schemes that are traditionally used in transmission over

error-prone channels and preventing bandwidth wastage though intelligent bandwidth

reservation and utilization while guaranteeing the promised spatial and temporal video

resolution at the receiver." (*Id.* at 3.)

A further understanding of the invention can be achieved by reading the following

claim.

1. A method of generating information indicative of a video frame
for subsequent transmission over a communication network, the method
comprising the steps of:

segmenting a video frame into a plurality of discrete spatial
components;

transforming each of the plurality of discrete spatial components
into a plurality of discrete frequency components; and

assigning an order transmission priority to each of the plurality of
discrete frequency components that determines the time order in which
the plurality of discrete frequency components are to be transmitted over
the communications network;

whereby information indicative of the video frame is generated for
subsequent transmission over the communications network.

Claims 1, 2, 14, 16-18, 28-31, and 43-52 stand rejected under 35 U.S.C.

§ 103(a) as anticipated by U.S. Patent No. 6,002,802 ("Chujoh") and U.S. Patent

No. 6,141,486 ("Lane"). Claims 3-5, 15, 19, 20, and 32-34 stand rejected under

§ 103(a) as obvious over Chujoh, Lane, and U.S. Patent No. 5,526,052 ("Ar").

Claims 6-12, 21-25, 27, and 53-57 stand rejected under § 103(a) as obvious over

Chujoh, Lane, and U.S. Patent No. 5,763,805 ("Martucci"). Claims 35-41 stand

rejected under § 103(a) as obvious over Chujoh, Lane, Ar, and Martucci.

OPINION

Rather than reiterate the positions of the examiner or the appellants *in toto*, we address the main point of contention therebetween. Admitting "that Chujoh fails to particularly disclose assigning an order transmission priority to each of discrete frequency components, and assigning a transmission time order priority to each of the discrete digitally represented frequency components," (Examiner's Answer at 5), the examiner "submit[s] that Lane clearly teaches the priority levels that are assigned to the frequency components before or after data transmission (col. 25, lines 33-57); where if the priority is implemented before data transmission so the order transmission is determined based upon the assigned priority of the video frames." (*Id.* at 10.) The appellants argue, "the priority system utilized by *Lane* does not determine the transmission order of any video data or component thereof. Rather, it is used to determine what is, and what is not, to be placed in the trick play segments." (Appeal Br. at 8.)

"Analysis begins with a key legal question -- *what* is the invention *claimed*?" *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567, 1 USPQ2d 1593, 1597 (Fed. Cir. 1987). In answering the question, "the Board must give claims their broadest

reasonable construction. . . ." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d 1664,

1668 (Fed. Cir. 2000).

Here, independent claim 1 specifies in pertinent part the following limitations:

"assigning an order transmission priority to each of the plurality of discrete frequency

components that determines the time order in which the plurality of discrete frequency

components are to be transmitted over the communications network. . . ." Independent

claims 16, 30, and 48 specify in pertinent part similar limitations. Giving the

independent claims their broadest, reasonable construction, the limitations require

assigning a priority to components of a video signal to specify the chronological order in

which the components are to be transmitted over a communications network.

Having determined what subject matter is being claimed, the next inquiry is

whether the subject matter would have been obvious. "In rejecting claims under 35

U.S.C. Section 103, the examiner bears the initial burden of presenting a *prima facie*

case of obviousness." *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956

(Fed. Cir. 1993) (citing *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444

(Fed. Cir. 1992)). "'A *prima facie* case of obviousness is established when the

teachings from the prior art itself would . . . have suggested the claimed subject matter

to a person of ordinary skill in the art.'" *In re Bell*, 991 F.2d 781, 783, 26 USPQ2d 1529,

1531 (Fed. Cir. 1993) (quoting *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143,

147 (CCPA 1976)).

Here, Lane discloses a "[d]igital video tape recorder ('VTR') and servo circuit for

supporting the display of images during trick play[1] VTR operation." Abs., ll. 1-2.

Figure 8(a) of the reference "illustrate[s] a block diagram of a video and audio

transmission circuit, according to one embodiment of the present invention, generally

indicated by the reference numeral 100. The circuit 100 comprises a video

encoder 102, an audio encoder 103, a prioritizer 104, a transport encoder 109, a

channel modulator 110 and a transmitter/antenna 112." Col. 19, ll. 49-55. Although the

prioritizer assigns a priority to components of a video signal, we are unpersuaded that

the priority specifies the chronological order in which the components are to be

transmitted. To the contrary, "[t]he prioritizer 104 . . . implements a prioritization

scheme that is based on the video data's utility to VTR applications such as trick play

operation. Thus, video data utility is determined as a function of how useful the data is

for generating a recognizable and scaleable image which is useable during trick play

operation." Col. 20, ll. 46-52.

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[1]"During modes of operation such as playback during reverse or fast forward,
referred to as trick play modes, the tape velocity is different than the tape velocity
during standard record/playback mode." Lane, col. 2, ll. 46-48.

We find no teaching or suggestion that Lane's utility-based prioritization scheme determines the chronological order in which the reference transmits video data to a receiver. To the contrary, Figure 9 of the reference "illustrate[s] a circuit for a digital VTR compatible television receiver 200, capable of supporting VTR trick play operation. . . ." Col. 31, ll. 14-16. The television receiver includes "a demultiplexer 210, a video transport depacketizer 212 and a priority decoder module 214." Col. 32, ll. 41-42. "One function of the priority decoder 214 is to restore the correct order to the codewords after they are removed from the transport data packets so that they can be decoded by the video decoder module 216. This reordering is possible using stored information contained within the priority decoder 214 on the legal order for different priority codewords." *Id.* at ll. 48-54. "Lane doesn't say precisely what order they are put in at this stage, but the very fact that they are processed upon receipt to put them in a certain order means that they were not sent in the that [sic] order." (Reply Br. at 4 (emphasis and footnote omitted)). "It . . . appears unlikely that the new order precisely follows the priorities (i.e. priority 1 components come first, followed by priority 2 components, etc.), [because] such would require only the priorities themselves, and would not also require the use of 'stored information . . . on the legal order for different priority codewords' as required in Lane. Col. 32, lines 51-54." (*Id* at n.1.)

Furthermore, the examiner does not allege, let alone show, that the addition of

Ar or Martucci cures the aforementioned deficiency of Chujoh and Lane. Absent a

teaching or suggestion of assigning a priority to components of a video signal to specify

the chronological order in which the components are to be transmitted over a

communications network, we are unpersuaded of a *prima facie* case of obviousness.

Therefore, we reverse the obviousness rejection of claim 1; of claims 2-12, 14, and 15,

which depend therefrom; of claim 16; of claims 17-25 and 27-29, which depend

therefrom; of claim 30; of claims 31-41 and claims 43-47, which depend therefrom; of

claim 48; and of claims 49-57, which depend therefrom.

CONCLUSION

In summary, the rejections of claims 1-12, 14-25, 27-41, and 43-57 under

§ 103(a) are reversed.

REVERSED

ERROL A. KRASS   )
Administrative Patent Judge   )
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) BOARD OF PATENT
JERRY SMITH   )   APPEALS
Administrative Patent Judge   )   AND
) INTERFERENCES
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)
LANCE LEONARD BARRY   )
Administrative Patent Judge   )

LEYDIG VOIT & MAYER LTD
TWO PRUDENTIAL PLAZA
180 NORTH STETSON
SUITE 4900
CHICAGO, IL 606016780